

# A Continent on Fire

by Jon E. Keeley

When Yellowstone National Park ignited several summers ago, some land managers considered this to be the “*Challenger* accident” of fire ecology. The bureaucratic backlash did temporarily halt the use of fire on U. S. federal lands, but in the end this event did much to publicize the role of fire in natural ecosystems. In the same manner, Stephen J. Pyne’s book *Burning Bush: A Fire History of Australia* will do much to educate the global community about the role fire has played in the lives of Australians, as well as citizens of other continents.

Stephen Pyne is a great storyteller, and here he weaves as fine a tale as one could imagine about a phenomenon as seemingly ordinary as fire. The history of fire is related through a collection of four “books”: *The Eucalypt*, *The Aborigine*, *The European*, and *The New Australian*.

The story begins hundreds of millions of years ago, at a time when the present continent of Australia was but a piece of a larger landmass known as Gondwana. Through eons of time, Australia split off

message of fire from its earliest origins to the present. It is so flammable that “once torched, the burning bush resembled a spiral nebula, its fuels and fires like paired arms locked into an accelerating vortex.” In the process of adapting to a life with fire, the eucalypt grew so accustomed to this feature of nature that life without it is impossible for some *Eucalyptus* species. In effect, the eucalypt has become the element of combustion on which Australian fire depends.

Stephen Pyne is the Zen master ecologist who teaches us that separating the

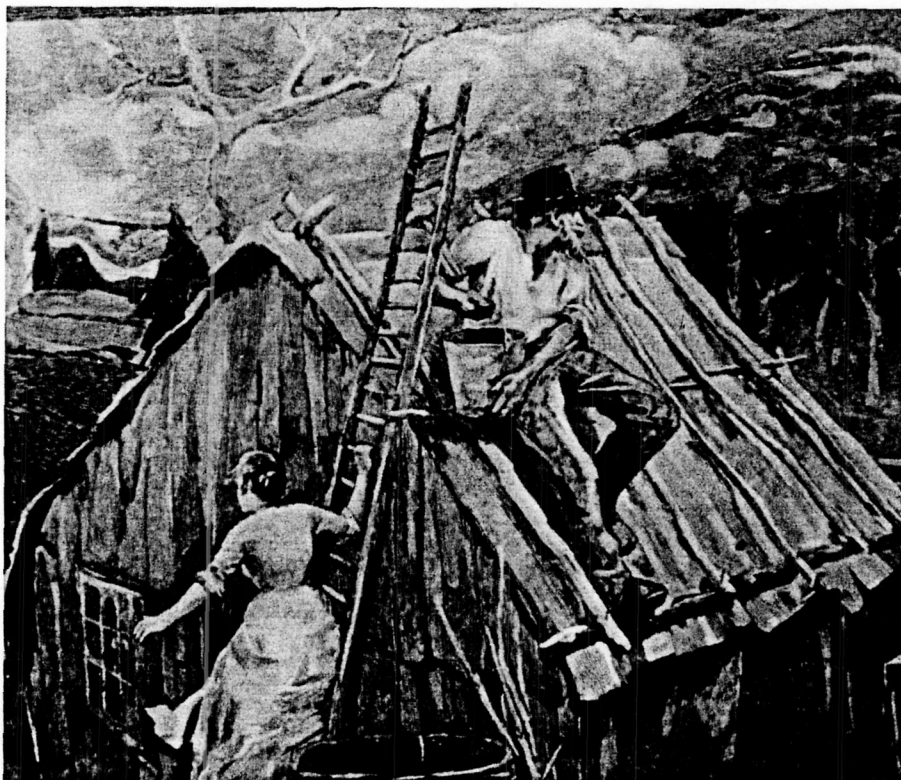
organic and inorganic is not always possible. Like the Zen idea that an organism’s skin does not separate it from, but rather joins it to, the environment, Pyne tells us that fire and plant are one, and “the linkage between life and fire is the biomass they share—for one, part of a cycle of nutrients and habitats; for the other, fuel.”

*Burning Bush* gives the reader a glimpse into the world of plant adaptations to fire, introduced as “unimaginable freaks of fire.” Here are described plant structures such as the lignotuber, a woody, underground, swollen stem that stores nu-

**BURNING BUSH: A FIRE HISTORY OF AUSTRALIA**, by Stephen J. Pyne. *Henry Holt and Company*, \$27.95; 497 pp., illus.

from its Gondwana siblings, Africa, India, and Antarctica. This breakup isolated Australia, allowing its biota to follow a separate course of evolution. The purpose of Pyne’s story is to convince the reader that fire, more than any other force, has been an overriding feature of the Australian landscape. Rich in words and images, the author’s message is that “fire enhances, multiplies, stimulates, recycles, and animates, a plural not a singular process, massaging a varied, subtle biota.”

In Australia, the eucalypt carries the



*Farmers fighting a bush fire that threatens their bark house*

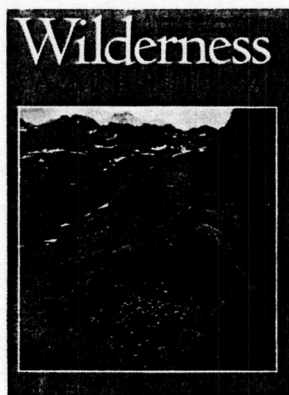
From Cassell's *Picturesque Australia* (1960), edited by E.E. Miller

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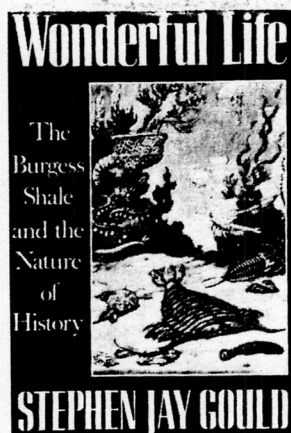
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trients and water. The lignotuber also houses numerous dormant buds ready to spring to life once the aboveground stems are destroyed. Other plant species hold their seeds inside woody cones for many years, and dispersal to germination sites occurs only after fire. Thus, the critical seedling stage of the plant's life history is given the advantage of fire's beneficial effect; plant competitors are removed and the combustion of organic matter releases valuable nutrients. Other pyrogenic "freaks" include the grass tree *Xanthorrhoea*, a plant that seldom if ever flowers, except following fire.

The ecology of Australian plant adaptations to fire is a fascinating study that has already generated many research papers. One disappointment in the *Burning Bush* was that little more than what I have outlined above found its way into this book. Considering the depth and detail Pyne has given to the sociological aspects of fire, this plant ecologist felt cheated. And curiously, as a scientist I did not find, as Stephen Pyne worried in the preface, that his "poetic license" set my "teeth on edge." In fact, quite the opposite, the paucity of rich metaphor and poetic license in the second half of the book was noticed and missed. In the very few instances my teeth were on edge I felt this feeling would be shared with nonscientists; for example, "The mulga melange hosts a biotic corroboree, a massing of multiple species that dance around a central fire which illuminates but does not inform." Such phrases dance around the point, illuminate the prose, but fail to inform.

The power behind Stephen Pyne's message, however, is that it goes beyond describing the history of fire in Australia. Here we have a glimpse into the life of the Aborigines and how fire was integrated into all facets of their existence. This book will open a new world for many readers who previously never considered how fire could be incorporated into the psyche of a race of people. Where the eucalypt is described as a pyrophyte, the Aborigine is profiled as a pyrophile. "In the Aborigine, Australian fire had discovered an extraordinary ally."

What developed was a symbiosis between humans and nature. Until approximately 40,000 years ago, lightning was the primary source of ignition for wildfires on the Australian continent. Upon the arrival of *Homo sapiens*, fire expanded its geographical and seasonal range. However, not only did the Aborigines carry the torch farther into the bush and beyond the seasonal limits of lightning but they also used fire to extract many of their resources from the world around them.



From the age of three the Aborigine was educated in the ways of utilizing fire. Fire was more than a cooking tool. It was an agricultural tool, used to manage the natural ecosystems, encouraging some food plants and discouraging other, use-less plants. Fire was a hunting tool, used to drive kangaroos from hiding. Fire also was a means of protection, capable of driving off enemies, as well as reducing combustible plant materials, which if allowed to accumulate were capable of sustaining catastrophic fires.

In the chapter "Fires of the Dreaming," Pyne describes how "fire was as integral to the mental as to the material existence of the Aborigine." It formed the basis of their spiritual world. The reader is led to believe that without fire much of what makes all of us human would not have been possible. Campfires allowed us to extend the length of our waking hours into the night. Such time is less useful for hunting and basic survival than for intellectual intercourse; for storytelling. It is around the campfire that the Aborigines created their spiritual universe. "Spiritual invention depended on a material context of heat and light; the social life that sustained cognition pivoted around a fire." Much Aboriginal myth and ritual in-

volved fire, and Pyne recounts numerous Aboriginal tales involving its use.

Europeans entered the scene and set about a course of altering the ecology of fire on the Australian continent. However, such changes came about not because the new inhabitants were unfamiliar with fire; "probably no fire practice in Australia—or throughout all of Gondwana—lacked an antecedent in British history." As with the Aborigines, fire was an integral part of the British cognition, and Britons had "fire rites, fire ceremonies, and fire myths." What complicated the role of fire in the life of the European in Australia was the multiplicity of roles played by the new settlers. For example, in order to burn the cover from certain rock formations, miners "brought fire where fire had been at best an infrequent presence." Pastoralism brought new fauna with "a fever that ravaged every niche in Australia," and "by ruthless overgrazing, the alien herds devoured the fine fuels that could carry fire." What followed was a disruption in the local ecological infrastructure; unpalatable shrub species, previously held at bay by fire, were now allowed to proliferate and shade out the forage grasses. As a consequence, more combustible plants accumulated, setting the stage for cata-

strophic fires, and Australians have lived through many.

Beginning in the midnineteenth century, major catastrophic conflagrations, named after days of the week, Black Tuesday, Black Sunday, and so on, devastated various inhabited parts of Australia. Each seemed to bring with it a different message and to provoke a different response from the populace. Using these events, Pyne leads the reader in detail (perhaps too much detail) through the historical development of the modern-day Australian fire strategy.

The "New Australian" is the product of centuries of cultural evolution on the Australian continent. As the populace strove for its own identity in the world, fire was part of the baggage. People in the field of forestry in various countries of the world have developed policies of dealing with fire; from this body of knowledge, and much personal experience, Australians have fashioned their own strategy for living with fire in the natural environment.

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